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ABSTRACT

This publication provides vocational evaluators with guidelines to help facilitate selection and purchase of work samples. It describes some of the essential elements of a well-constructed or "model" work sample (as defined in Vocational Evaluation and Work Adjustment Association [VEWAA]-Commission on Accreditation of Rehabilitation Facilities [CARF] Vocational Evaluation and Work Adjustment Standards with Interpretive Guidelines and VEWAA Glossary. Seven elements of the model work sample are discussed: (1) appropriateness to client population, (2) work sample purpose, (3) relationship to available labor/training market, (4) work sample orientation (job description and test information), (5) administration, (6) scoring, and (7) learning assessment. The appendix provides a checklist suitable for modification which can be used as a reference when evaluating a work sample. (YLB)

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SUGGESTED GUIDELINES

FOR

EVALUATING WORK SAMPLES

BY

PAUL McCRAY

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FOREWORD

Work samples are one of the most commonly used tools of vocational evaluation. Indeed, in many respects they often form the focal point for much of the assessment that takes place in many vocational evaluation programs. Because of this, it is important that programs take special care to select and utilize only those work samples that are accurate and reliable in measuring client interests, abilities, or aptitudes. Poorly constructed work samples can easily lead to erroneous, unsubstantiated observations and conclusions about client capabilities, and this eventually leads to dissatisfaction for both the client and the referral source. On the other hand, well constructed work samples are real assets in obtaining reliable and accurate estimates of client interests, aptitudes, and other job related factors. Thus, the advantages of careful work sample selection with regard to meeting the general programmatic needs of a facility, and the specific, individual needs of clients are apparent.

Vocational evaluators are frequently confronted with the difficult task of evaluating and selecting work samples for use within their programs. This process may take many forms. Evaluators may be interested in obtaining individual commercial work samples or entire work sample systems. Perhaps they plan to independently develop work samples based on the local labor market. In other cases, primary interest is in obtaining noncommercial work samples developed by other programs or facilities. In addition to these examples, there are other instances where evaluators may not necessarily be interested in obtaining new work samples, rather primary concern is with reviewing the existing work samples already in use within the facility in order to determine which merit continued use, which should be upgraded, and which should be discarded. In all of these circumstances, the question that should be foremost in the evaluator's mind is how does one go about objectively assessing the quality and integrity of a given work sample?

The Vocational Evaluation and Work Adjustment Association (VEWAA) and the Commission on Accreditation of Rehabilitation Facilities (CARF) have worked together to formulate standards which spell out some of the essential characteristics of a work sample.

> 3.4.3.1.1.7.2 If work samples are used:
>
> a. the vocational evaluation service work samples resources shall be representative of realistic competitive worker skills.
>
> b. work samples shall be established by an analysis of job tasks or traits related to a specific area of work, and be standardized as to materials.
>
> c. competitive norms or industrial standards shall be established and used. (CARF, 1980, p. 30)

CARF has adopted these standards and now requires that they be applied as part of the vocational evaluation accreditation process. However, it should be understood that these standards only represent the most basic requirements regarding the structure and content of a work sample. As such, they are necessarily limited in scope. There are many other important work sample characteristics which evaluators should consider when critiquing a prospective work sample.

The purpose of this publication is to describe some of the essential elements of a well constructed or "model" work sample. Few work samples presently available will contain all the elements described in this publication. This should not, however, be considered as an indictment against a given work sample since it can't be assumed that all work samples, under all circumstances, must contain all of the elements of the model in order to be useful. Discretion must be used when comparing existing work samples to the model since many work samples are developed and utilized for highly specific reasons, and therefore, in some cases it is unrealistic to expect the inclusion of all elements. For example, a work sample developed for the sole purpose of assessing range of motion or specific physical capacities need not necessarily have a client orientation which attempts to relate the task to specific occupations. Thus, the guidelines discussed in this publication should be regarded as representing a flexible model which can be useful in attempting to systematically examine the content, utility, and design of individual work samples.

It should be noted that these guidelines do not specifically apply to the many performance based tests designed to measure isolated aptitudes or traits. These guidelines only apply to work samples as defined in VEWAA-CARF Vocational Evaluation and Work Adjustment Standards With Interpretive Guidelines and VEWAA Glossary (1978, p. 20). Discussion of technical considerations such as work sample norms, reliability, and validity is limited to considering their relationship to CARF work sample standards (for further discussion of the standards, refer to McCray, 1979b). The APPENDIX of this publication provides evaluators with a checklist which can be used as a reference when evaluating a work sample. Evaluators are encouraged to modify this form in order to better meet the particular needs of their own programs.

It is hoped that after reading this publication, evaluators will: (1) have a more thorough understanding of the essential elements of a well constructed work sample, (2) be encouraged to critically review their program's existing work samples, and (3) plan to use this publication as a reference when considering new work samples for possible inclusion into their evaluation program. MDC would appreciate comments from practitioners concerning their reactions and suggestions for improving this document. In addition, evaluators who have established work sample review guidelines which they have found useful are invited to send them to MDC for consideration for possible distribution to the field. Full and proper credit is given to all contributions for materials used by MDC.

Paul McCray, M.S.
August, 1980

ELEMENTS OF THE MODEL WORK SAMPLE

In recent years, work sample testing has become a commonly accepted practice in vocational assessment. Its usefulness has spread beyond the confines of vocational evaluation and rehabilitation into other areas including: industrial psychology, personnel management, occupational therapy, and vocational education. There are many reasons for its increased acceptance as a viable assessment technique, the most common justification being that it has some unique advantages over the traditional paper-and-pencil testing procedures which have been employed for the last several decades. Sax (1973) has outlined a few of the major rationales for work sample testing.

> The major advantages for the work sample method include: (a) the work sample (developed by job analysis) is as close to the reality of work as we can get within the rehabilitation facility (except for actually putting clients to work in the facility), (b) it provides exposure and experience on a wide range of jobs, (c) performance identical to work is required on the assumption that the closer the work sample is to the criterion, the more likely it is to be valid, (d) it not only assesses skills, but reveals aspects of the client's personality, interest, motivation, and attitudes towards the job, (e) clients respond more naturally to meaningful rather than abstract tasks, (f) it can eliminate cultural, educational, and language barriers in the assessment of vocational potential, (g) many prospective employers are more receptive to utilization of work sample performance than predictors from other sources. (p. 32)

Yet, in spite of these advantages, work samples are not without significant limitations. Sax (1973) went on to point out:

> Some of the disadvantages for the work sample method include: (a) work samples tend to emphasize quality and quantity of production rather than personality factors, (b) developing work samples for the many different types of job in the labor market is unfeasible, (c) workers are part of a working social family--and the social experience, reactions from co-workers, heat, noise, motivation, and wages vary so considerably in our shops that there is little comparison between the environment in industry and the work sample method, (d) we're really not measuring the actual job, (e) because work technological change is so rapid, we run the risk of developing a good appraisal instrument for jobs which no longer exist, and (f) work samples have not often used statistical methods to develop reliability and validity information. (p. 32)

Perhaps the most pragmatic attitude toward the use of work samples is represented by Nadolsky (1977) who suggests that vocational evaluators have a professional responsibility to critically examine work samples with regard to the instrument's ability to realistically achieve the goals and objectives it sets forth for itself. The vast majority of individuals working within the field of human measurement will readily agree that there are "good" tests and "bad" tests. Buros (1977) has gone so far as to state ". . . most

standardized tests are poorly constructed, of questionable or unknown validity, pretentious in their claims, and likely to be misused more often than not" (p. 1972). Thus, the importance of being able to discriminate between useful tests and those that may be poorly designed, is evident. Certainly there are many work samples that have merit as well as some that do not. If this problem is recognized, evaluators should be able to avoid the trap of presuming that all or most work samples, due to their very existence, are necessarily useful tools. Evaluators must be prepared to critically examine every prospective work sample on an individual basis, so that they will select and utilize only those tools which will contribute to a valid and reliable understanding of a client's immediate and long-term performance capabilities. It is, therefore, imperative that vocational evaluators have a sound understanding of the essential elements of a work sample.

Appropriateness to Client Population

Botterbusch (1976) has suggested that an important consideration in work sample selection is the appropriateness of a work sample's design with regard to corresponding to the abilities and limitations of the client population being served. Appropriateness takes into account many factors including: prerequisites, instructional methods, job demands, and task complexity. All of these factors combine to influence the potential utility a work sample will have with a given population of clients. Where a program is serving a wide variety of clients, it is likely that most work samples will be appropriate for at least a small segment of the client population. However, in cases where the client population is relatively homogeneous (e.g., mentally retarded), it is imperative that evaluators understand the critical relationship between work sample demands and client capabilities. When these factors are not taken into account, it is easy to obtain work samples that cannot be used with the vast majority of clients simply because of instructional limitations or task complexity.

One of the most fundamental considerations in work sample selection is whether the prerequisite skills required to perform the task are likely to be held by the majority of clients that will be asked to take the work sample. Most work samples require certain prerequisite skills such as ability to read, to hear, and to write. It is imperative then, that the majority of people for which the task is selected, will have the prerequisite skills. If this is not the case, much money and time may be invested in a tool which is largely useless. For example, a program serving a retarded client population would generally be ill-advised to select any work samples requiring sophisticated reading skills or the ability to operate complex audiovisual equipment as a prerequisite to work sample performance. Similarly, a facility serving a vision-impaired population would generally not want to use work samples that require normal eyesight, unless of course, appropriate adaptations can be made for the tasks.

The second important criteria is the relationship between the occupations the work sample purports to relate to and the anticipated level of client capabilities. This notion is indirectly supported by CARF Standard 3.4.3.1.1.6 which states, "Job areas assessed in vocational evaluation shall be based on client capability . . ." (CARF, p. 30). If a program is serving a client population which is largely composed of individuals with normal cognitive

skills but severe physical impairments, work samples which relate to jobs requiring unimpaired physical capabilities would usually be inappropriate, since the job areas assessed would not be realistic in view of client limitations. Certainly evaluators should avoid obtaining work samples based on jobs which are either too complex or too simple in relation to client capabilities. In many cases, this relationship can be determined by briefly examining the work sample, assuming the evaluator has a sound understanding of the strengths, limitations, and interests of the client population.

Another important consideration is the instructional technique used during the work sample administration process. As much as possible, it should parallel the method used in industry for similar jobs and also be compatible with client learning styles. For example, if a work sample simulates a routine, repetitive assembly operation and it is recognized that in industry workers are trained via an oral and demonstration instructional technique, then evaluators should look for work samples that use that technique. A work sample that uses a sophisticated written format may be beneficial in terms of reducing the amount of time the evaluator spends with the clients, but it may not accurately portray the actual job. In special circumstances where client learning styles are not compatible with the normal instructional format, e.g., severely retarded clients being given verbally loaded instructions, then the evaluator should study the prospective work sample to determine whether the instructional strategy could be adapted to better correspond to client learning styles. For example, the instructional format for a bench assembly task might be altered to a hands on, "try another way," technique for a severely retarded client population. Although it may seem that any instructional technique can be readily adapted to client needs, this is not always the case. Instructions which are very well presented via an audiovisual format may not be easily converted to a written, hands on approach because of task complexity, evaluator time constraints, or need to show motion. Failure to insure that the instructional mode parallels that of industry and is compatible with client learning styles can contribute to erroneous conclusions about client capabilities (McCray, 1979a).

Work Sample Purpose

Perhaps one of the most critical characteristics of the model work sample is that it have clearly stated purposes and objectives. In other words, the purpose(s) for which the work sample was developed must be concretely defined. Such a description must go beyond simply stating that "the work sample was developed to assess work potential or job interests." The specific occupations, interest factors, aptitudes or abilities which the tool is designed to address should be spelled out in the work sample manual (e.g., "ability to operate an industrial drill press, interest in unskilled, gross assembly bench work tasks, upper body range of motion, mechanical aptitude"). Definitions of each of these factors should also be provided so that users will have a reliable understanding of the specific factors which they are interested in measuring.

The purposes and objectives for which a work sample is designed should, at least on a broad level, relate with the goals of the vocational evaluation program. When a work sample is first being considered, evaluators should keep in mind how that specific tool will help better meet individual

client needs, which will in turn help meet program goals. If a work sample's purpose is not clearly defined, it is difficult to estimate the extent to which the work sample corresponds to the goals of the program. For example, imagine that a vocational evaluation program's primary goal is to provide a basis for systematic occupational exploration to a client population primarily composed of school age students. In a case such as this, if the program wished to use work samples as part of the exploration process, then primary emphasis should be placed on obtaining work samples whose objectives are commensurate with those of the program. Thus, work samples primarily designed for use as occupational exploration tools would generally be more useful than work samples that have questionable face validity and measure only an isolated trait. In a case like this, the isolated trait work sample would be a poor simulation of a job or job area and, therefore, the program objective of occupational exploration, would not be adequately met by a work sample designed for a different purpose.

Another example which commonly occurs in vocational evaluation programs is the practice of using work sample testing as a basis for predicting the most appropriate job or training avenues for the client. For example, if a program defines its major goal as the accurate assessment of job potential, then it is imperative that the facility have on hand assessment tools and techniques which have substantive evidence that they too have similar goals and objectives, i.e., they can serve as a valid basis for job prediction. If in such a case an evaluator wishes to use work samples as a basis for making specific predictions with regard to employability potential in certain jobs or job areas, it is important that the evaluator carefully critique all the work samples being used with regard to their ability to help achieve the goal of job prediction. In some cases, this process will lead the evaluator to the conclusion that the actual purpose of the work sample was only marginally related to job prediction, e.g., interest or isolated trait assessment. In such cases, the evaluator must recognize that program goals are not in line with the stated work sample goals. Thus, the work sample is being used for the wrong purpose. Evaluators would never think of using aptitude tests to assess interests, yet in many ways, this is what is being done when evaluators regularly use work samples for purposes for which they were not designed and which may, in fact, be different from program goals.

Most vocational evaluation programs utilize more than one isolated assessment technique or tool. Indeed, CARF (1980) has stated in Standard 3.4.3.1.1.7 that all vocational evaluation services shall use two or more of the following assessment techniques: work samples, psychometrics, situational assessment, or job site evaluation. Therefore, when critiquing new work samples, evaluators must recognize when they already have on hand other work samples and evaluation techniques which serve essentially the same purposes as the prospective work sample. Obtaining several new work samples whose purposes duplicate those of other work samples, psychometrics, job sites, etc., should generally be avoided as it is costly and can contribute to the development of a redundant assessment process wherein clients perform a series of tasks, all of which are essentially the same, although they may, on the surface, look different. For example, if a facility has set up a series of clerical job sites as evaluation tools, there would be little reason for an evaluator to obtain clerical work samples which would differ little from the job sites. Time and money can be better spent on increasing the variability and scope of the assessment tools' purposes rather than duplicating what is

already available simply because of convenience or failing to understand the specific rationales for the work samples being used.

The addition of a work sample to an existing work sample testing program should be the result of having identified a concrete client-centered need which is not being met by the available work samples, but which could be satisfied by the prospective work sample. For example, if a new industry such as electronics assembly moves into the area and it appears that clients could be placed in this occupational area, but no work samples or other assessment devices which assess ability to do this kind of work are on hand at the facility, then there would be a clearly established need for this tool. It could be a valuable asset to the program and would not duplicate the existing tools. Similarly, if a facility had a series of mail sorting and filing work samples which were useful, but still failed to measure certain isolated yet critical factors, e.g., ability to use a postage scale and read a weight/zone/cost chart, then the selection of an additional mail sorting and filing work sample which specifically addressed this need could be very useful because the new work sample would compliment the existing tools.

Work samples that clearly define their purposes are advantageous in many respects. First, this information can be very useful for evaluation planning. For example, if a work sample has certain distinct purposes and the evaluator knows the purposes for which the client was referred, then it becomes a relatively easy task to match work sample purposes to evaluation objectives. Thus, if one of the purposes of evaluating a client is to assess upper body range of motion, then the evaluator should be able to readily identify work samples which are designed to assess upper body range of motion.

The second advantage is that work samples with clearly defined purposes make it easier for evaluators to determine the extent to which certain work samples overlap in purpose. This information reduces the frequency of continuing to develop or purchase additional work samples which may superficially appear to be different but which are in fact, serving basically the same functions. If a program has several work samples, all of which clearly specify that their purpose is to assess eye-hand-foot coordination, manual dexterity, and fine finger dexterity, then it becomes apparent that there is no need for additional tools that measure the same factors. Yet, if these purposes are not clearly spelled out, different evaluators will often have different perceptions of the same work sample's purpose, and thus the temptation to obtain additional, albeit functionally equivalent work samples, increases.

Work samples with clearly defined purposes are also useful when orienting a client to a work sample task and when counseling a client as to the results of the overall evaluation. Because the evaluator knows the specific objectives of the work sample as well as the reasons why it was administered, this factor can be more reliably and frequently more meaningfully communicated to the client. It is often easier for clients to understand the rationale for a task and the significance of their performance if the evaluator can clearly indicate that "the purposes of work sample X were to assess ability to: sort by alphabet, sort by number, repair a hydraulic brake, etc., and on those measures the results indicate . . ."

Last, clearly defined work sample purposes facilitate communication between the evaluator and the referral source. It is often advantageous in

a client staffing for the evaluator to be able to define the specific reasons for which a work sample was administered. By delineating the concrete purposes of the task, the evaluator is suggesting that work samples are given for specific reasons, to answer specific questions; and a routine, mechanical, "shotgun" approach wherein every work sample is administered simply because it is available, is avoided. This lends credibility and professionalism to the program and staff. In addition to this, through continued close association with the referring counselors, the counselors gain familiarity with the work samples available and their purposes and may, as part of the referral process, request that certain work samples be administered. This procedure is paralleled in traditional psychological testing when referral sources request that specific paper and pencil tests be administered to a client.

Relationship to Available Labor/Training Market

Botterbusch (1976) has pointed out that one of the basic foundations of an effective vocational evaluation program is a thorough and accurate understanding of the potential employment/training opportunities realistically available in the communities from which each client is being served. Some vocational evaluation programs find themselves serving clients referred from communities with relatively narrow, homogeneous labor markets. Other programs serve a broad range of clients coming from a heterogenous or widely-varying labor market where the employment/training opportunities are seemingly unlimited. In either case, and because many work samples are developed directly from the Dictionary of Occupational Titles listings, it is imperative that prior to selecting assessment tools evaluators be aware of what types of opportunities actually exist within the client's available labor market. Once this is known, work samples can be reliably and objectively selected on the basis of their relationship to the needs of clients and the potential job market. Failure to recognize the unique limitations and opportunities that exist within any specific job market can contribute to the purchase and/or development of work samples which have limited practical utility, i.e., job predictions can be made based on work sample performance, but because jobs are not available in that occupational cluster, the assessment and its outcomes are largely irrelevant. When this happens, vocational evaluation can easily become a service of limited practical use.

Recognizing that it is important to understand the available labor market, one must decide on how to go about accumulating this knowledge. If at all possible, it should be approached in a logical, systematic manner so that the information derived from this research can be combined into an organized picture of an area's labor demands and opportunities. Once this profile is generated it should be periodically updated and maintained on file for future reference, since it may indicate significant trends, e.g., certain businesses such as electronics plants have hired a large number of clients over a one year period; an occupational cluster exists for which the facility has no work samples; or an occupational area that is heavily assessed during the evaluation process actually has very few, if any, job openings. The advantage of accumulating and keeping this information in an organized manner is that rather than assuming one or two staff members are carrying it around in their heads, it is documented and available for the entire staff. Such information cannot only be useful to evaluation personnel, but also job developers, contract procurement people, salesmen, work adjustment staff,

job training, and production personnel. It also means that when new evaluation personnel come into the facility, accurate and timely job market information will be available to them immediately, thereby, eliminating a time lag of several weeks or months wherein new evaluators must build up their knowledge of the available labor market. It is also advantageous in that the information does not disappear when the one or two staff members that have accumulated it eventually leave the facility.

Fortunately, there are some relatively easy ways to accumulate up-to-date labor market information. First, in order to get a general picture of the major industries in the areas where clients would typically seek employment or training, evaluators can contact the appropriate Chamber of Commerce which usually has the information available. In addition to this, many urban areas often have manufacturer's guides which describe many of the manufacturing and service industries in the area. Evaluators should also locate and identify the educational/vocational training programs that are available. Many times, business colleges, junior colleges, and vocational-technical schools provide relatively specific job training programs that would be appropriate for clients. Thus, evaluators must be aware of the educational training programs that are also available. Once the evaluator has a general understanding of the broad spectrum of job opportunities, more detailed information related to the specific kinds of jobs existing within the aforementioned industries will be wanted.

Another way for evaluator's to accumulate specific job information is to work with the state employment service which has labor analysts and up-to-date listings of local as well as state and regional employment opportunities. This data will provide the evaluator with specific job listings and labor market predictions which can be studied in order to gain a relatively objective perspective of different communities' labor needs. Evaluators should also study the want ads of newspapers as well as contact private employment agencies in order to get a broad-based view of the labor market.

Once an evaluator understands the broad occupational areas existing within the community as well as several of the specific jobs that exist within those industries, it is then possible to intelligently compare the extent to which the program's work samples and other evaluation tools/techniques correlate with the labor market. Occasionally this can be done by comparing the job titles listed in the work sample manual with those listed in the labor market survey. Although this is a useful method, it has one significant limitation; a local job may have the same or similar title as one listed in the work sample, but the two tasks, when examined closely, may actually be quite different. How then, does an evaluator reliably determine the extent to which a work sample relates to specific jobs within the labor market? One useful method is to perform a job analysis on the work sample and then compare that information to the job description provided in the Dictionary of Occupational Titles, the job description provided by the employer's personnel department, or even better, do a job analysis on the actual job and then compare that to the work sample job analysis. This will give highly specific information about the work sample's relationship to the actual job market.

Implementing some of these ideas will help evaluators better determine the extent to which the program's work samples represent the actual job demands of the available labor market. In many cases, evaluators will find gaps in their

work sample program, i.e., viable occupational areas are not accurately represented by the available work samples, not represented at all, or a limited number of occupational groupings are receiving most of the work sample development attention at the expense of other viable job areas. By doing this carefully and systematically, the evaluation program is establishing its credibility for referral sources with regard to having evidence that the program actually is a community-based resource for realistic, practical vocational assessment.

It has already been suggested that job analysis is one method for determining the representativeness of a work sample. Work sample representativeness refers to the degree to which a work sample simulates the job(s) it purports to relate to. This concept is supported by CARF (1980) Standard 3.4.3.1.1.7.2a which states, "the vocational evaluation service work samples resources shall be representative of realistic competitive worker skills" (p. 30).

Work sample manuals that provide concrete information regarding the work sample's representativeness are highly desirable because they allow the evaluator a ready reference for determining, to some extent, the degree to which a work sample actually simulates the tasks, aptitudes, traits, etc., required of specific jobs. There are many ways the content validity of a work sample can be established. Dunn (1971) has outlined one practical format that essentially involves comparing DOT task listings to the work sample tasks.

Fountain Server, DOT Code 319.474-010

DOT Task Listing	Work Sample Tasks
Prepares soft drinks and ice cream dishes from memory or by following oral directions	Prepares soft drinks and ice cream dishes by following oral directions
Serves the above foods	None
Cleans and polishes glasses, dishes, and fountain work.	Cleans and polishes glasses and dishes
May prepare and serve sandwiches	None

If this information is contained in the work sample manual, the evaluator can determine the degree to which the work sample represents the job of Fountain Server as described in the DOT.

McCray (1979b) has suggested a similar method for work sample content validation.

Fountain Server, DOT Code 319.474-010

Job Analysis Description	Work Sample Tasks
Prepares soft drinks and ice cream dishes from memory (70%)	Prepares soft drinks and ice cream dishes by following oral directions (90%)
Cleans and polishes glasses, dishes and fountain work (15%)	Cleans and polishes glasses and dishes (10%)
Handles money to make appropriate exchanges for purchase of fountain items. Operates NCR cash register (10%)	None
Sweeps fountain area and removes appropriate rubbish (5%)	None

Note that this particular format provides the work sample reviewer with more detailed information regarding the content validity of the work sample. The second example is based on an actual job analysis rather than a DOT description, and indicates that the job actually differed significantly in terms of task requirements from the more general DOT description. The use of a job analysis provides a method whereby the percentage of time required on each task can be specified and, therefore, available for comparison. The end result is that the latter method often provides a more detailed picture of the representativeness of the work sample.

The third type of content validity format that evaluators can look for when critiquing work samples involves the provision of a task matrix grid as evidence of content validity (a more complex work sample/job task has been selected in order to better show this procedure).

WORK SAMPLE TITLE

Cashiering

Related Jobs	Ind.	DOT No.	Receives cash or checks from mock customers	Issues appropriate change to mock customers	Operates cash register to record transactions	Completes credit charge transactions using charge plates	Verifies balances in register against receipt totals	Totals cash and checks for bank deposit	Fills out bank deposit slips	TOTAL
Cashier I	clerical	211.362-010	x	x	x	x	x	x	x	7
Cashier II	clerical	211.462-010	x	x	x	x	x	x	x	7
Supervisor - Cashiers	hotel & rest. ret. tr.	211.136-010						x	x	2
Supervisor - Food Checkers and Cashiers	hotel & rest.	211.137-014					x	x	x	3
Teller	finan. inst.	211.362-018	x	x				x		3
Paymaster of Purses	amuse. & rec.	211.367-010	x	x				x		3
Cashier - Checker	ret. tr.	211.462-014	x	x	x					3
Cashier - Wrapper	ret. tr.	211.462-018	x	x	x	x	x			5
Cashier - Gambling	amuse. & rec.	211.462-022	x		x		x			3
Check Cashier	bus. ser.	211.462-026	x	x	x					3
Driver's - Cash Clerk	motor trans.	211.462-030	x		x		x			3
Teller	light, heat & power	211.462-034	x		x					2
Toll Collector	gov. ser.	211.462-038	x	x			x			3
Cashier - Courtesy Booth	ret. tr.	211.467-010	x	x	x		x			4

WORK SAMPLE TITLE (Cont.)

Cashiering

Related Jobs	Ind.	DOT No.	Receives cash or checks from mock customers	Issues appropriate change to mock customer	Operates cash register to record transactions	Completes credit charge transactions using charge plates	Verifies balances in register against receipt totals	Totals cash and checks for bank deposits	Fills out bank deposit slips	TOTAL
Parimutuel - Ticket Cashier	amuse. & rec.	211.467-018		x	x		x			3
Sheet Writer	amuse. & rec.	211.467-026		x			x			2
Ticket Seller	clerical	211.467-030	x	x	x		x			4
Cashier - Tube Room	ret. tr.	211.482-010	x	x			x			3
Food Checker	hotel & rest.	211.482-014			x					1
Food & Beverage Checker	hotel & rest.	211.482-018			x					1

It is evident that there are certain advantages to this type of content validation procedure, the primary one being that the evaluator can readily discern all the jobs related to the work sample and the degree of overlap between work sample and job tasks. Yet, there are two significant limitations which evaluators must be aware of. First, the matrix does not depict related job tasks that are significant yet not addressed by the work sample. For example, the job of Cashier I appears to be thoroughly represented by the work sample; all the work sample tasks are required on the job. The evaluator may therefore quite easily assume that because of this, the work sample is necessarily fully representative of the job, cashier. Yet, this may not be the case, since the actual job of Cashier I may require other significant skills (e.g., alphabetically stocking shelves) which are not measured by the work sample. In other words, all of the tasks actually required on the job are not listed on the matrix. Only the tasks required of the work sample are listed. This problem emphasizes the importance of evaluators thoroughly understanding the individual work sample tasks as well as all of the significant tasks required by a given job.

The second problem revolves around the fact that the relative times required of each task are not spelled out. For example, the work sample task "operates cash register to record transactions" may occupy 20% of the time it takes to perform the work sample, yet on the job of Cashier I, which is said to require this activity, 75% of a worker's time might be devoted to this task.

This discrepancy could be important when making decisions as to client capabilities, and certainly influences one's perception of the degree to which the work sample simulates the actual job. Yet with this particular type of format, such information is frequently not available.

In any case, it is imperative that if a work sample is being used to predict job success or measure specific job interest, it should be representative of the skills, aptitudes, and abilities needed to do the job. If it is not, client job interest may be based on an inaccurate depiction of the job and any predictions as to specific job placement potential may be at least partly incorrect.

Finally, evaluators must recognize that although work samples may be convenient, they are not always a realistically viable assessment technique for many occupations. In some cases, evaluators would be better advised to develop other evaluation tools such as job sites or situational assessment programs in order to best evaluate a client's job potential. For example, many service occupations such as cook, maid, or dishwasher would be difficult to quantify into a work sample; job site evaluation could provide a more effective basis for evaluation in these areas. Other more cognitively oriented occupations in the technical, managerial, or professional areas are often better assessed by job specific paper and pencil tests. Therefore, before evaluators go to the expense of developing or purchasing a work sample, they must carefully consider: (1) can the work sample realistically assess what it purports to assess, (2) would other assessment techniques be feasible and provide a more effective basis for decision-making, and (3) to what extent is the work sample related to the available labor market?

Face validity is another concept important to work sample testing; although, it generally receives minimal recognition in traditional psychological testing theory. Lyman (1978) has described face validity as "the least important of the indications of validity" (p. 29). Anastasi (1968) has stated, "fundamentally, the question of face validity concerns rapport and public relations . . . face validity itself is a desirable feature of tests. Certainly if test content appears irrelevant, inappropriate, silly, or childish, the result will be poor cooperation, regardless of the actual validity of the test" (p. 104).

Face validity may generally be thought of as the extent to which a test "looks" valid. It is an important concept with regard to vocational evaluation in general and work sample testing in particular since one of the most common rationales for using work samples rather than paper and pencil tests is that vocational evaluation is essentially a work assessment process. Therefore, the tests used should look like real work to clients and as Anastasi suggests, this should help minimize the likelihood of unreliable client performance. The concept of face validity is particularly important when one recognizes that many of the clients served in vocational evaluation have been low achievers in school and are likely to be discouraged by what appear to be the usual paper and pencil tests which have historically emphasized their inadequacies. Nadolsky (1977) has described face validity as " . . . an essential feature of a work sample. It enables the individual who performs the work sample to identify its contents as being relevant to a particular occupational area" (p. 7).

The extent to which a work sample looks like real work is strongly influenced by the representativeness of the tool. For example, a job sample which by definition fully represents an entire job (with the possible exception of the overall industrial environment) is the most representative type of work sample possible and, therefore, will look very much like real work, i.e., it will have a great deal of face validity. Other work samples, however, may look progressively less and less like a real job or even a work related task. For example, a work sample measuring an isolated trait such as eye-hand-foot coordination will usually have much less face validity than a job sample. Yet, it may generally be said that the majority of single trait, or cluster trait work samples will still appear to clients to be more relevant to work than an abstract paper and pencil test. Thus, evaluators should be careful when reviewing work samples to avoid those that claim to be work samples but actually are little more than another series of paper and pencil tests.

When choosing between trait oriented work samples and a job sample which more closely resembles real work, evaluators must be sensitive to the specific need which the prospective work sample must meet and the extent to which they feel face validity will impact on their clients. If the general client population being served is comprised of individuals with only physical disabilities and relatively high level cognitive skills, their interest and motivation may be unaffected by work samples that have minimal face validity. On the other hand, if most of the clients have below average cognitive skills, evaluators may prefer work samples which have very obvious face validity since this factor may make it easier for the client to understand and accept the purposes of the evaluation (i.e., to assess job potential and not "pass or fail") and this may facilitate client motivation and interest.

Work Sample Orientation

A work sample orientation essentially consists of providing each client with (1) job qualifications, salary, opportunities for advancement, training, working conditions and (2) test information--purpose of the test, how it relates to work, and factors to be assessed. A concrete, organized orientation to a given work sample is highly beneficial because it adds meaningfulness and relevance to the task, particularly if the evaluator can point out specific vocational opportunities within the local labor market which are directly related to the work sample. Many times the purpose of a task is not readily apparent to a client although the task's objectives may seem obvious to the evaluator. A work sample which may only appear to be marginally related to a job can especially benefit from an orientation because explaining the purpose of the task to the client helps ensure that the client is less likely to fail to recognize the relationship between performance and potential job/training opportunities.

A thorough work sample orientation also provides the client with a comprehensive understanding of a job or job area. Although the physical makeup of the work sample and performance of the task may give the client a basic understanding of the skills and aptitudes required on a job, a client orientation provides additional information with regard to salary, fringe benefits, and advancement opportunities. This added information helps the client gain an accurate understanding of the entire job, not just the skills needed to perform the job.

Because a client orientation facilitates an accurate understanding of many diverse aspects of a job or job area, a client's job interests can be more reliably determined. In other words, a client's perception of a job is based on accurate, detailed information and any expressed interest is likely to be relatively stable since that interest is not based on an incomplete, partial picture of a job. For example, a client may express a strong interest in a job based on his knowledge of the skills involved, but when he is encouraged to also consider the amount of training needed or the opportunities for advancement, he decides that he is no longer interested. The orientation, therefore, helps the evaluator and the client assess the latter's interests, attitudes, and knowledge of occupational information, which in turn is related to CARF (1980) Standard 3.4.3.1.1.1:

> Vocational evaluation services shall be provided on a systematic, organized basis . . . The range and scope of the evaluation services shall be sufficiently comprehensive to assess or obtain information concerning at least the following . . .
>
> d. interests, attitudes, knowledge of occupational information . . . (p. 29)

Botterbusch (1974) has provided an example of a client orientation:

> A. Client Orientation -
>
> Note to Evaluator: This orientation is to be presented to each client before administering the STOUT U-BOLT ASSEMBLY WORK SAMPLE. The material does not have to be read verbatum. However, all information should be covered. Deliver the presentation in an informal manner and pause to answer questions as necessary. The purpose of this orientation is (1) to inform the client about assembly and similar jobs which are related to this work sample and (2) to inform the client of specific traits or characteristics on which he is being evaluated.

The STOUT U-BOLT ASSEMBLY WORK SAMPLE that you will be taking in a few minutes will help you and me to find out several things about you. One of the things it will tell us is how well you can do on assembly jobs and how well you like this type of work. Let me tell you a few things about assembly jobs. Many of the things we commonly use are put together in factories by people called "assemblers." These people put together small or large parts to make things such as: television sets, radios, toys and dolls, and household items like mops, brooms, and picture frames. If you were employed in one of these assembly jobs, you would work inside a factory and be close to other people doing jobs like yours. You would probably sit at a bench and use small tools such as screwdrivers, drills, soldering guns, and wrenches to put things together. Often the parts would be brought to you in boxes or on a conveyer belt. In many assembly jobs, you would only complete one part of the finished product.

> You would pass this along to the next worker so he could finish his part. Your foreman would carefully supervise your work and other people called "inspectors" would check it carefully for mistakes. People don't have to have a lot of education to become assemblers, but they have to be good with their hands, be able to do the same thing over and over again, enjoy working near people, and to follow directions carefully. Sometimes people who do well in assembly jobs get promoted to more advanced jobs. Some may become foremen or inspectors themselves and others become assemblers who work on very complicated equipment.

The evaluator then tells the client of nearby factories that hire assemblers or related jobs; what the wages are; what the working conditions are; and how many of these jobs are available. If no assembly jobs are available, give information about related jobs in the Handling Worker Trait Group (.887), such as packaging, dishwashers, cook helper, and custodians.

> This work sample will tell us things other than how well you like assembly work. It will help us to find out how well you can move your hands and how well you can use your fingers. After you try this work sample, both of us will know how long you can do the same thing without getting mad at the job, bored, or tired.
>
> Do you have any questions?

If the client has no questions, the evaluator begins to read the instructions and demonstrate the work sample. (pp. 5-6)

This example points out the utility of a work sample orientation and emphasizes that it does not have to be a lengthy, cumbersome amount of information in order to be effective.

Administration

One of the most basic areas of consideration that must be addressed when critiquing work samples is the clarity with which all the administration procedures are spelled out.

CARF (1980) has mandated ". . . work samples shall be . . . standardized as to materials, layout, instructions, and scoring" (p. 30). The vast majority of commercially developed work samples meet this guideline; however, it is not uncommon to find "in-house" work samples for which no standardized administration procedures have been developed. This problem is important because a lack of standardization can contribute to erratic administration procedures which may have a profound effect on client performance. When this occurs, it is difficult to evaluate the extent to which client performance is representative of client skills and how much is the direct result of variations in the administration procedures. Lack of standardization also makes it very difficult to compare one client's performance to another's or to a norm group, since as was already discussed, differences in administration procedures can influence

performance outcomes. Dunn (1977) has pointed out that even slight variations in the administration procedures can strongly affect performance. In an effort to deal with this problem, CARF (1980) has interpreted standardization to mean that all work samples should possess certain critical characteristics including:

> 3.4.3.1.1.7.2b. Each work sample shall have an examiner's manual which specifies: (1) its relationship to the Dictionary of Occupational Titles, Occupational Divisions, Worker Trait Groups, or some appropriate job analysis system; (2) prerequisites; i.e., any specific work sample task requirements which might make administration of sample unfeasible for a given individual; (3) the work sample purpose; i.e., specifically what the sample is attempting to assess; (4) the materials and equipment used; (5) preparations for testing and the layout of materials; (6) instructions to the individual; (7) instructions for timing, evaluating errors, and scoring if applicable; (8) instructions for interpreting scores. (p. 79)

It should be understood that work sample standardization is not, however, meant to imply that all work samples should be administered in all cases in a rigidly mechanical method that is blind to individual client needs and limitations. McCray (1979a) has pointed out the importance of instructional flexibility when working with clients whose learning styles are incompatible with the standardized instructional technique being offered. Perhaps this concept best exemplifies the notion that evaluators should have on hand standardized work samples that will be appropriate for the vast majority of clients being served, but when clients with special needs and limitations who cannot perform the standardized task at a level which intuitively appears to be representative of their general skills, the work sample and evaluator must be flexible enough so that the work sample can be adapted to better fit individual client needs. For example, a standardized soldering work sample might use oral instructions during the learning phase, yet a particular client might be partially deaf. In such a case, the standardized administrative procedure (once it was verified that it was inappropriate) should be able to be adapted (e.g., substitute written instructions, so that client performance is not adversely affected by rigidly standardized administration procedures). This concept is supported by CARF (1980) Standard 3.4.3.1.1.2 which states:

> Appropriate adaptive assessment tools and methods shall be used wherever possible with individuals having sensory, communication, or other functional impediments . . . which might invalidate otherwise standardized procedures (p. 30).

It is imperative that the instructions to the evaluator in all areas including the information to be imparted to the client be clearly described. If procedures such as how many people the task can be given to at one time, client instructions, work sample conditions, or prerequisites are not easily understood, then this can lead to irregularities and errors in the day-to-day use of the work sample. Evaluators should carefully read, study, and in many cases self-administer a work sample in order to assess the clarity of instructions.

The setup, breakdown, layout, and construction of the work sample must be detailed so that tools, materials, etc., used in the work sample are consistently provided in a standardized method so as not to either positively or negatively affect client performance. Diagrams should parallel those used in industry, be clearly labeled, and spell out work sample dimensions. These factors are important for three reasons: (1) diagrams that don't parallel industry's can lead to making erroneous conclusions about client abilities, (2) a work sample may be physically incompatible with the space or layout requirements of the unit, and (3) where norms or industrial standards are provided it is essential that the task performance methods and tools remain constant so that performance is not biased and the norms, therefore, rendered meaningless. For example, if a work sample manual specifies the work sample layout and MTM norms are going to be used, but the manual does not specify the exact physical dimensions of the layout (e.g., position and distances between objects), then the MTM standards are useless since a variation in distance or position between two tools could dramatically improve or hinder performance capability.

Nearly all psychological and performance oriented tests require that the testing conditions be clearly defined. This is because alterations in test conditions can have a profound impact on client performance. The same holds true for work samples. Evaluators should determine the extent to which the work sample conditions are defined, i.e., work environment, lighting, client dress, standing, sitting requirements. This is important for two basic reasons. First, altering the work sample conditions could easily invalidate norms, reliability, and validity of a work sample. Second, depending on the uniqueness of the work sample conditions, it may be that the facility does not have the specified conditions available. For example, if a small engine repair work sample is to be administered in a noisy, dirty, industrial type of environment yet the evaluation unit is headquartered in a sterile, quiet office, it may be impossible to adequately simulate the required conditions. In a case such as this, evaluators may decide that it would be inappropriate to use the work sample under conditions contrary to those specified in the manual.

In many cases, the ease of administration of a work sample will be strongly affected by the estimated time needed for: (1) setup, breakdown, administration of instructions, etc., and (2) the time typically needed for the average client to perform the work sample. These factors may strongly influence the utility of the prospective work sample. For example, if a program typically has a high client/evaluator ratio which necessarily reduces the amount of time an evaluator can spend with an individual client, then care should be taken to avoid selecting work samples which will require a great deal of one to one contact between the evaluator and the client. Similarly, if a program is set up so that the average client only spends one or two days in evaluation, then the evaluator will often want to avoid selecting work samples that require a lot of time for the client to complete (e.g., six or seven hours). Thus, it is important for the evaluator to be able to determine a relatively reliable estimate of how much administration/performance time will have to be devoted to the task for it to be usable.

The final consideration relates to cost. This involves not only the cost of purchasing or constructing the entire work sample but also the approximate expense that can be expected per administration of the work sample. Certainly,

overall cost is important, but administration costs can also be significant. Some work samples may be expensive to administer and this may impact on their practical day-to-day utility. In other cases, work samples with essentially similar purposes, but widely varying administration costs may be found. Thus, it is important for evaluators to keep these two cost factors in mind.

Scoring

It is imperative that all work samples have scoring procedures which are readily apparent and clearly defined. Scoring data generally include forms, tables, normative information, performance criteria for practice sessions, behavior observation checklists, readministration guidelines, quality criterion, and time limitations. It is important that scoring procedures be thoroughly outlined so that they can be reliably followed by all staff members expected to be using the work samples.

The timing factors that are generally most pertinent to a work sample include: (1) whether the work sample is timed or untimed, (2) whether there is a flexible maximum time limit (e.g., if the work sample is not completed by the client within five hours it should be discontinued), (3) whether there is a definite time limit for completing performance (e.g., all clients will have 30 minutes to complete as much of the tasks as they can). In most cases, timing will involve recording how long it takes a client to complete the entire work sample task or discrete portions of the task.

Quality factors generally are related to the errors that can be made on a work sample task. It is important that what constitutes an error or unacceptable quality level be clearly described so that evaluation of a client's quality is as objective as possible. For example, on a measurement task, an error might be defined as any measurement in excess or less than one quarter inch of the desired length. In a case such as this, an error range has been described because although the measurement may not be entirely accurate, it is considered acceptable if it falls within the one quarter inch guidelines. Another example would be a single nut and bolt assembly wherein an assembly is defined as an error if the nut falls off the bolt when the assembly is lightly shaken. In this case, no error range has been defined, rather an absolute standard is provided. The assembly will either fall apart or it will not, so error determination is an easy process. Quality on some tasks may also be rated more subjectively. For example, a client's performance of a typing task with regard to overall neatness might be scored as above average, average, or below average, providing that a concrete definition of these terms is provided. In many cases, specific behavioral factors such as stamina, punctuality, cooperativeness, etc., will be scored by this method. In either case, it is essential that the scoring criteria, e.g., above average, far exceeds normal, etc., must be defined.

Part C of CARF (1980) work sample standard 3.4.3.1.1.7.2 indicates that ". . . c. competitive norms or industrial standards shall be established and used" (p. 30). Thus, when evaluators are reviewing new work sample manuals for possible inclusion within their program, they should carefully examine the work sample manual in order to determine whether competitive norms/standards are available. Within this context, competitive standards denote the performance standards regularly applied or achieved by workers in industry.

It does not include sheltered workshop norms except in cases where the work sample was developed as a means of predicting workshop employment potential, and the worker group the client is expected to be competing against are clients.

If a work sample does not have competitive performance standards available but does appear to still be useful, evaluators should carefully consider the feasibility of developing their own local norms. This may be a costly and time consuming process, since it may require the accumulation and analysis of much performance data as well as the potential expense of having outside consultants (e.g., industrial engineers) develop the competitive standard. However, obtaining competitive production standards, particularly on work samples directly related to specific jobs, can provide an important basis for furthering one's understanding of a client's employment potential.

Finally, most work sample manuals generally address behavioral factors which are to be rated based on client performance. It has already been pointed out that the rating levels must be clearly defined; however, it is imperative that beyond this, definitions be provided of all behaviors that are to be rated. This is important because it helps increase inter-rater reliability, i.e., each rater has the same understanding and definition of each behavior on which clients are to be rated. This is critical, otherwise evaluators may easily end up rating clients without any consistency because each evaluator has a different concept of the same behavioral term. For example, a bench work assembly work sample might be designed to address the behavior factor, stamina. The client is required to sit at a chair for three consecutive hours, assembling objects, and based on the client's behavior and feedback, the evaluator will be able to score the client's behavior with regard to doing sedentary work. However, if the term stamina is not defined within the context of the work sample task, it may be viewed differently by different evaluators. With regard to the aforementioned example, if no definition were provided, one evaluator might consider the term stamina to refer to the ability to work consistently, a second might regard it as ability to stay "on task," whereas a third evaluator may view it as the physical capacity to do sedentary work for extended periods up to three hours. Thus, it is important that if a work sample purports to assess certain behavioral factors, they be clearly defined and described, not just denoted.

Learning Assessment

Revell and Wehman (1978) have separated the concepts of learning and performance by identifying two distinct phases of work sample testing. The learning phase is basically the period during which the client acquires the requisite skills and concepts needed to perform a task. The performance phase is the period following the learning phase in which the client is expected to demonstrate his task related competencies under formal testing conditions. Before individuals are required to perform tasks under testing conditions, they must have thoroughly learned and mastered all skills, concepts, motions, etc., necessary to produce the expected behaviors. McCray (1979a) has carried this concept further by suggesting that in order to determine whether adequate learning has taken place, "work samples must have objective criteria which are measureable and define when adequate learning has taken place" (p. 9). Thus, work sample manuals should clearly specify what behaviors are to be learned by

the end of the learning phase, as well as concrete criteria which the evaluator can use as a basis for determining whether the client adequately understands what to do. For example, if at the end of the instructional phase of a nut and bolt sorting task the manual only specifies that "if the client has no questions and appears to understand the task, proceed to performance testing," then evaluators may easily assume that a client understands a task when in fact, he does not. If on the other hand, the manual specifies that "the evaluator should proceed to performance testing only after the client has correctly sorted ten consecutive nuts and bolts with 100% accuracy, without regard to speed," evaluators will have a concrete learning standard which all clients must achieve prior to performance testing. The criteria defines what behaviors have to be mastered and the extent of mastery. Thus, the evaluator has a clearcut method for ascertaining whether a client appears to understand the task. Therefore, the likelihood of having unprepared clients who have not thoroughly understood the task instructions, erroneously proceed to the performance phase, is reduced. This also means the likelihood of misinterpreting a client's poor performance, as necessarily indicative of a lack of task related ability when, in fact, it may be due to inappropriate work sample instructional procedures, is reduced. Evaluators should study prospective work sample manuals to determine if they clearly spell out the tasks which a client must master and learn prior to being asked to perform the entire task. The availability of this information will help insure that accurate, reliable observations as to client capabilities take place.

SUMMARY

Choosing the best possible work sample to meet specific, well defined needs, is a challenging and difficult process. The purpose of this publication and the accompanying rating form found in the Appendix is to provide evaluators with guidelines which can help facilitate the selection process and, thereby, caution evaluators against randomly selecting and purchasing work samples. Many different aspects of the model work sample have been discussed; however, it should be remembered that few existing work samples will possess all the characteristics of the model. Therefore, evaluators must carefully weigh those factors they believe most relevant to their needs. In most cases, evaluators will find that there are three components which form the foundation for the viability of nearly all work samples: work samples should be appropriate to the needs and limitations of the clients to be served; they should relate to real jobs or training opportunities that actually exist in the available labor market, and their purpose(s) should be clearly defined. Work samples which fail to meet these basic, minimum criteria will frequently be of limited usefulness and may, in fact contribute to a decline in the effectiveness of the evaluation service. On the other hand, work samples which soundly address these elements, as well as incorporate to varying degrees the other components of the model, will be exceptionally useful tools.

The benefits of careful work sample selection are many and far reaching. Perhaps the most basic is the inevitable fact that clients and referral sources will be better served. Because the work samples used are carefully chosen to meet specific needs and objectives, observations as to client capabilities and limitations are likely to be more valid, more realistic, and serve as a more effective basis for decision making. In addition to this, money and personnel will not be wasted on purchasing or developing irrelevant, unreliable work

samples of questionable utility which at best, may simply sit unused, taking up valuable space, or which at worst, may contribute to erroneous interpretations as to client capabilities. The long-term effect of careful work sample selection is that an increased number of clients will be successfully rehabilitated as a direct result of an effective and efficient vocational evaluation service.

REFERENCE LIST

Anastasi, A. Psychological testing (3rd ed.). London: The McMillan Company, 1968, p. 104.

Botterbusch, K. F. Stout u-bolt assembly work sample. Menomonie, Wisconsin: University of Wisconsin-Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1974.

Botterbusch, K. F. A comparison of seven vocational evaluation systems. Menomonie, Wisconsin: University of Wisconsin-Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1976.

Buros, O. K. Fifty years in testing. In O. Buros (Ed.), The eighth mental measurements yearbook (Vol. II). Highland Park, New Jersey: The Gryphon Press, 1978.

Commission on Accreditation of Rehabilitation Facilities. Standards manual for rehabilitation facilities. Tucson, Arizona: Author, 1980.

Dunn, D. Validating work evaluation procedures. Paper presented at Short-Term Training Program, University of Wisconsin-Stout, Menomonie, Wisconsin, 1971.

Lyman, H. B. Test scores and what they mean (3rd ed.). Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1978, pp. 28-29.

Materials Development Center. Work sample manual format. Menomonie, Wisconsin: University of Wisconsin-Stout, Stout Vocational Rehabilitation Institute, 1977.

McCray, P. Learning assessment in vocational evaluation. Menomonie, Wisconsin: University of Wisconsin-Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1979. (a)

McCray, P. An interpretation of VEWAA/CARF work sample standards. Menomonie, Wisconsin: University of Wisconsin-Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1979. (b)

Nadolsky, J. The use of work samples in the vocational evaluation process. Paper presented at Systems of Vocational Evaluation, A Rehabilitation Forum, Auburn University, Auburn, Alabama, 1977.

Sax, A. Work Samples. In S. Crow (Ed.), Positions on the practice of vocational evaluation. Washington, D.C.: Vocational Evaluation and Work Adjustment Association, 1973.

U.S. Department of Labor. The dictionary of occupational titles (4th ed.). Washington, D.C.: Government Printing Office, 1978.

Vocational Evaluation and Work Adjustment Association & Commission on Accreditation of Rehabilitation Facilities. VEWAA/CARF vocational evaluation and work adjustment standards with interpretive guidelines and VEWAA glossary. Menomonie, Wisconsin: University of Wisconsin-Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1978.

APPENDIX

Suggested Guidelines for Evaluating Work Samples

Work Sample (w.s.) Title: _____

Purpose for which w.s. is being reviewed: _____

_____

_____

_____

Comments: _____

_____

_____

_____

Item	Rating	
	Yes	No
1. APPROPRIATENESS TO CLIENT POPULATION		
a. Prerequisites realistic in view of client abilities	☐	☐
b. Job areas assessed realistic in view of client abilities	☐	☐
c. Instructional mode realistic or could be adapted to fit client abilities	☐	☐
d. Instructional mode parallels that used in industry	☐	☐
2. WORK SAMPLE PURPOSE		
a. Purpose(s) clearly stated and defined	☐	☐
b. Purpose(s) appropriate to program goals	☐	☐
c. Purpose does not duplicate existing w.s.	☐	☐
d. Purpose does not duplicate other assessment tools	☐	☐
e. Compliments existing w.s. and other assessment tools	☐	☐

Item	Rating	
	Yes	No
3. RELATIONSHIP TO AVAILABLE LABOR/TRAINING MARKET		
a. Directly related to actual jobs in available labor market	☐	☐
b. Directly related to actual training programs in available labor market	☐	☐
c. Extent of representativeness/validity documented	☐	☐
d. Job analysis or similar information available	☐	☐
e. Face validity apparent	☐	☐
4. ORIENTATION		
a. Standardized orientation present	☐	☐
b. Orientation is job related and understandable to clients	☐	☐
c. Sufficient amount of information to relate w.s. to available labor market	☐	☐
5. ADMINISTRATION		
a. Instructions to evaluator standardized and understandable	☐	☐
b. Instructions to client standardized and understandable	☐	☐
c. Materials used clearly described	☐	☐
d. Equipment used clearly described	☐	☐
e. Layout, setup and breakdown, and construction clearly described	☐	☐
f. Diagrams understandable and comparable to those used in industry	☐	☐
g. Safety precautions described	☐	☐
h. Time necessary for evaluator to administer and score is realistic for program	☐	☐

Item	Rating		
	Yes	No	
5. ADMINISTRATION (cont.)			
i. Time necessary for average client to complete w.s. is realistic for program	☐	☐	_____min.
j. Per administration costs described	☐	☐	$_____
k. Purchase/development costs described	☐	☐	$_____
6. SCORING			
a. Timing factors thoroughly described	☐	☐	
b. Quality/error factors thoroughly described	☐	☐	
c. Competitive or industrial norms available and defined	☐	☐	
d. Behavior rating factors thoroughly described	☐	☐	
7. LEARNING ASSESSMENT			
a. Mastery criteria for learning phase provided	☐	☐	
b. Mastery criteria realistic in terms of ensuring adequate client learning precedes performance testing	☐	☐	
TOTAL	☐	☐	

8. SUMMARY COMMENTS (rationale for selecting/rejecting w.s.)

MDC ORDER FORM

This form is for use when ordering MDC publications. For additional information on available audiovisual programs, contact the MDC Information Service.

Quantity		Title and Cost	Total
_____	1.	Vocational Evaluation and Work Adjustment Services in Vocational Rehabilitation - $2.00	_____
_____	2.	Observation and Client Evaluation in Workshops: A Guide and A Manual - $1.50	_____
_____	3.	Road to New Horizons: Adjustment Training - $2.00	_____
_____	4.	MDC Behavior Identification Format - $2.00	_____
_____	5.	Effective Report Writing in Vocational Evaluation and Work Adjustment Programs - $2.50	_____
_____	6.	Individualized Client Planning for Work Adjustment Services - $1.50	_____
_____	7.	Adjustment Services in Rehabilitation: Emphasis on Human Change - $3.00	_____
_____	8.	Client Rating Instruments for Use in Vocational Rehabilitation Agencies - $1.50	_____
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